

IN THE CLAIMS

Please cancel claims 9-10 and 17-18 without prejudice or disclaimer. Please amend claims 1-8, 14-16, 22-29, and 31-32 and add new claims 33-44 as set forth below:

1. (Currently amended) A method for driving an LCD (liquid crystal display) panel associated with i number of ~~consisting of~~ scan lines and j number of column lines, said i and j being positive integers not less than 2, the method ~~arranged in rows and columns~~ respectively, comprising the steps of:

storing ~~data to be displayed on the LCD panel in a display data memory;~~

partitioning the scan lines into a plurality of scan blocks, ~~each scan block containing m number of scan lines;~~

~~sequentially selecting each scan block, activating multiple scan lines within the scan block;~~

~~concurrently outputting from the display data memory m number of display data items to be displayed in adjacent rows along the same column on the LCD panel; and~~

~~generating a column signal that would produce a display on the LCD panel according to the display data when multiple rows are selected~~

concurrently retrieving display data from a scan block of a display data memory, the display data memory arranged in a matrix corresponding to the i number of the scan lines and the j number of the column lines and the scan block corresponding to m number of the scan lines and said j number of the column lines, said m being a positive integer not less than 2 and not more than i ; and

19 generating column display signals by modifying the concurrently retrieved display data,
20 the column display signals generating a display on the LCD panel in accordance
21 with the concurrently retrieved display data.

1 2. (Currently amended) The method of claim 1, wherein ~~the step of~~ modifying the
2 concurrently retrieved display data ~~selecting each scan block further~~ comprises the step of
3 applying orthogonal function data to the concurrently retrieved display data to determine
4 mismatches ~~said multiple scan lines.~~

1 3. (Currently amended) The method of claim 2, wherein said step of ~~generating a~~
2 ~~column data signal~~ applying orthogonal function data comprises the step of:
3 performing exclusive OR operations ~~operation~~ between ~~said display data items~~ said
4 concurrently retrieved display data and said orthogonal row function data ~~to~~
5 ~~calculate mismatch numbers.~~

1 4. (Currently amended) The method of claim 3, wherein said step of generating a
2 ~~column signal~~ column display signals further comprises the step of:
3 decoding results of the exclusive OR operations to determine mismatch numbers ~~said~~
4 ~~mismatches to calculate mismatch numbers.~~

1 5. (Currently amended) The method of claim 4, wherein said step of generating a
2 ~~column signal~~ column display signals further comprises the step of:
3 shifting the data levels of the mismatch numbers to different data levels.

1 6. (Currently amended) The method of claim 4 ~~claim 5~~, wherein said step of
2 generating a ~~column signal~~ column display signals further comprises the step of:

3 selecting ~~a voltage level~~ voltage levels corresponding to the mismatch numbers from k
4 [[k]] number of voltage levels.

1 7. (Currently amended) The method of claim 6 ~~claim 4~~, wherein said m [[m]] is 3.

1 8. (Currently amended) The method of claim 7, wherein said k [[k]] is 2.

1 9-10 (Canceled)

1 11. (Original) The method of claim 1, wherein the LCD panel is an STN LCD
2 panel.

1 12. (Original) The method of claim 1, wherein said display data memory stores data
2 for displaying monochrome in gray scale.

1 13. (Original) The method of claim 1, wherein said display data memory stores
2 RGB data for displaying colors.

1 14. (Currently amended) A driver for driving an LCD (liquid crystal display) panel
2 associated with i number of ~~consisting of~~ scan lines and j number of column lines, said i and j
3 being positive integers not less than 2, the driver arranged in rows and columns respectively,
4 comprising:

5 a display data memory ~~having rows and columns of cells~~ for storing display data, the
6 display data memory arranged in a matrix corresponding to the i number of the
7 scan lines and the j number of the column lines and concurrently outputting the
8 display data corresponding to a scan block corresponding to m number of the scan
9 lines and said j number of the column lines, said m being a positive integer not
10 less than 2 and not more than i ~~partitioned into blocks of m number of scan lines~~
11 ~~and for concurrently outputting m number of data items be displayed in a selected~~
12 ~~block of scan lines and a selected column line; and~~

13 a column signal circuit for generating column display signals by modifying the
14 concurrently output display data, the column display signals generating a display
15 on the LCD panel in accordance with the concurrently output display data
16 calculating column signals that generates the same display by selecting multiple
17 rows.

1 15. (Currently amended) The driver of claim 14, wherein the display data memory
2 is a RAM (Random Access Memory).

1 16. (Currently amended) The driver of claim 14, wherein m [[m]] is 3.

1 17-18. (Canceled)

1 19. (Original) The driver of claim 14, wherein said display data memory stores data
2 for displaying black and white in gray scale.

1 20. (Original) The driver of claim 14, wherein said display data memory stores
2 RGB data for displaying colors.

1 21. (Original) The driver of claim 14, wherein said LCD panel is an STN LCD
2 panel.

1 22. (Currently amended) The driver of claim 14, wherein said column signal circuit
2 comprises:

3 an XOR (exclusive OR) block ~~having multiple~~ including j number of XOR sets of a
4 ~~predetermined number of XOR gates for performing exclusive OR operations~~
5 between the concurrently output display data and orthogonal function data to
6 determine mismatches, each XOR set including m number of XOR gates
7 corresponding to the m number of the scan lines in each scan block for performing

~~exclusive OR operation between the m number of data items and orthogonal
function data to determine mismatches.~~

23. (Currently amended) The driver of claim 22, wherein said column signal circuit
further comprises:

a decoder block ~~having multiple~~ including j number of decoders, the decoders for
decoding results of the exclusive OR operations to determine mismatch numbers
~~each decoder for determining a mismatch number based the result of mismatches-~~
~~from said each XOR set.~~

24. (Currently amended) The driver of claim 23, wherein said column signal circuit
further comprises:

a level-shifter block ~~having multiple~~ including j number of level shifters, the level shifters
for shifting the data levels of the mismatch numbers to different data levels each
~~level shifter for outputting a data level translated from said each decoder.~~

25. (Currently amended) The driver of claim 24, wherein said column signal circuit
further comprises:

a voltage selector block ~~having multiple~~ including j number of voltage selectors, the
voltage selectors for selecting voltage levels corresponding to the mismatch
numbers each voltage selector for selecting a voltage for the output of said each
~~level shifter.~~

26. (Currently amended) The driver of claim 25, wherein m [[m]] is 3.

27. (Currently amended) The driver of claim 26, wherein each of said level shifters
~~said each level shifter~~ is a 1-bit level shifter.

1 28. (Currently amended) The driver of claim 27, wherein ~~said voltage selector block~~

2 each of said voltage selectors selects one voltage level from 2 voltage levels.

1 29. (Currently amended) A liquid crystal display, comprising:

2 a LCD (liquid crystal display) panel associated with i number of ~~consisting of~~ scan lines

3 and j number of column lines, said i and j being positive integers not less than 2;

4 ~~arranged in rows and columns respectively,~~

5 a row driver for selecting the scan lines; ~~and~~

6 a column driver for driving the column lines; ~~comprising:~~

7 a display data memory ~~having rows and columns of cells for storing display data, the~~

8 display data memory arranged in a matrix corresponding to the i number of the

9 scan lines and the j number of the column lines and concurrently outputting the

10 display data corresponding to a scan block corresponding to m number of the scan

11 lines and said j number of the column lines, said m being a positive integer not

12 less than 2 and not more than i partitioned into blocks of m number of scan lines

13 ~~and for concurrently outputting m number of data items be displayed in a selected~~

14 ~~block of scan lines and a selected column line; and~~

15 a column signal circuit for generating column display signals by modifying the

16 concurrently output display data, the column display signals generating a display

17 on the LCD panel in accordance with the concurrently output display data

18 ~~calculating column signals that generates the same display by selecting multiple~~

19 ~~rows.~~

1 30. (Original) The liquid crystal display of claim 29, wherein the LCD panel is an

2 STN LCD panel.

1 31. (Currently amended) The liquid crystal display of claim 29, wherein m ~~[[m]]~~ is

2 3.

1 32. (Currently amended) The liquid crystal display of claim 29, wherein the column
2 signal circuit comprises:

3 an XOR (exclusive OR) block ~~having multiple~~ including j number of XOR sets ~~of a~~
4 ~~predetermined number of XOR gates for performing exclusive OR operations~~
5 between the concurrently output display data and orthogonal function data to
6 determine mismatches, each XOR set including m number of XOR gates
7 corresponding to the m number of the scan lines in each scan block for performing
8 ~~exclusive OR operation between the m number of data items and orthogonal~~
9 ~~function data to determine mismatches;~~

10 a decoder block ~~having multiple~~ including j number of decoders, the decoders for
11 decoding results of the exclusive OR operations to determine mismatch numbers
12 ~~each decoder for determining a mismatch number based the result of mismatches~~
13 ~~from said each XOR set;~~

14 a level-shifter block ~~having multiple~~ including j number of level shifters, the level shifters
15 for shifting the data levels of the mismatch numbers to different data levels each
16 ~~level shifter for outputting a data level translated from said each decoder; and~~

17 a voltage selector block ~~having multiple~~ including j number of voltage selectors, the
18 voltage selectors for selecting voltage levels corresponding to the mismatch
19 numbers each voltage selector for selecting a voltage for the output of said each
20 ~~level shifter.~~

1 33. (New) The method of claim 1, wherein said m number of the scan lines of the
2 scan block are adjacent to one another.

1 34. (New) The method of claim 3, wherein the exclusive OR operations are
2 performed on said concurrently retrieved display data without storing said concurrently retrieved
3 display data in data latches prior to the exclusive OR operations.

1 35. (New) The method of claim 5, wherein the data levels of the mismatch numbers
2 are shifted without storing the mismatch numbers in output latches prior to the step of shifting
3 the data levels of the mismatch numbers.

1 36. (New) The driver of claim 14, wherein said m number of the scan lines of the
2 scan block are adjacent to one another.

1 37. (New) The driver of claim 22, wherein the XOR block is directly coupled to the
2 display data memory to perform the exclusive OR operations on said concurrently output display
3 data without storing said concurrently output display data in data latches prior to the exclusive
4 OR operations.

1 38. (New) The driver of claim 24, wherein the level-shifter block is directly coupled
2 to the decoder block to shift the data levels of the mismatch numbers to different data levels
3 without storing the mismatch numbers in output latches.

1 39. (New) The liquid crystal display of claim 29, wherein said m number of the scan
2 lines of the scan block are adjacent to one another.

1 40. (New) The liquid crystal display of claim 32, wherein the XOR block is directly
2 coupled to the display data memory to perform the exclusive OR operations on said concurrently
3 output display data without storing said concurrently output display data in data latches prior to
4 the exclusive OR operations.

1 41. (New) The liquid crystal display of claim 32, wherein the level-shifter block is
2 directly coupled to the decoder block to shift the data levels of the mismatch numbers to different
3 data levels without storing the mismatch numbers in output latches.

1 42. (New) A method for driving an LCD (liquid crystal display) panel, the method
2 comprising the steps of:

3 concurrently retrieving display data stored in a scan block of a display data memory, the
4 scan block being a part of the display data memory and corresponding to a
5 plurality of scan lines and a plurality of column lines associated with the LCD
6 panel; and

7 generating column display signals by modifying the concurrently retrieved display data,
8 the column display signals generating a display on the LCD panel in accordance
9 with the concurrently retrieved display data.

1 43. (New) A driver for driving an LCD (liquid crystal display) panel, comprising:
2 a display data memory for storing display data, the display data memory concurrently
3 outputting the display data stored in a scan block of the display data memory, the
4 scan block being a part of the display data memory and corresponding to a
5 plurality of scan lines and a plurality of column lines associated with the LCD
6 panel; and

7 a column signal circuit for generating column display signals by modifying the
8 concurrently output display data, the column display signals generating a display
9 on the LCD panel in accordance with the concurrently retrieved display data.

1 44. (New) A liquid crystal display, comprising:

2 a LCD (liquid crystal display) panel;

3 a row driver for selecting scan lines associated with the LCD panel;

4 a column driver for driving the column lines associated with the LCD panel;

5 a display data memory for storing display data, the display data memory concurrently

6 outputting the display data stored in a scan block of the display data memory, the

7 scan block being a part of the display data memory and corresponding to a

8 plurality of the scan lines and a plurality of the column lines; and

9 a column signal circuit for generating column display signals by modifying the

10 concurrently output display data, the column display signals generating a display

11 on the LCD panel in accordance with the concurrently retrieved display data.